



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/032,062

12/31/2001

Yun Bok Lee

049128-5036

5647

9629

7590

02/08/2006

MORGAN LEWIS & BOCKIUS LLP  
1111 PENNSYLVANIA AVENUE NW  
WASHINGTON, DC 20004

EXAMINER

WARREN, MATTHEW E

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/032,062	Applicant(s) LEE, YUN BOK	
	Examiner Matthew E. Warren	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

This Office Action is in response to the Amendment filed on November 21, 2005.

### ***Claim Objections***

Claims 1 and 4 are objected to because of the following informalities: In lines 14 and 15 of claims 1 and 4 respectively, the limitation of "thing film" should be "thin film." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. (US 6,271,903) in view of Kim (US 6,177,970 B1).

In re claims 1 and 4, Shin et al. shows (figs. 13 and 14) a liquid crystal display device having liquid crystal cells arranged in a matrix comprising a gate line (21) for receiving a scanning signal, a data line (signal line 31) for receiving a data signal, and a pixel electrode (29) provided at an intersection of the gate line and the data line to drive a liquid crystal cell. A thin film transistor (T) for responding to the scanning signal is used to switch the data signal into the pixel electrode. A common line (22) is formed laterally adjacent to the pixel electrode along a direction of the gate and data lines. An

Art Unit: 2815

alignment film (not labeled-layer formed on top of source 27, drain, 28, and pixel electrode 29) is formed on at least a portion of the gate line, the data line and the pixel electrode to determine a primary alignment direction of a liquid crystal (an alignment layer is formed on the substrate to align the liquid crystal molecules-[col. 1, line 45-54 and col. 3, lines 4-12]). The pixel electrode is disposed directly on an insulating layer (24) that serves as the gate insulating layer of the TFT. The alignment film contacts the source and drain electrodes (27 and 28) of the TFT and upper and side surfaces of the pixel electrode. Shin shows all of the elements of the claims except the alignment film contacting the common line and the common line disposed directly on the gate insulating layer. Kim shows (fig. 5) a liquid crystal display device having liquid crystal cells arranged in a matrix type, comprising a common line (310) laterally adjacent to the pixel electrode (810). An alignment film (90) directly contacts upper and side surfaces of the common line and pixel electrode. The common electrode and pixel electrode (40) are formed directly on the gate insulating layer (50). With this configuration, the drive voltage is minimized and the generation of an afterimage is reduced (col. 5, lines 20-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the alignment film of Shin by forming the film in contact with a common line as taught by Kim to minimize the drive voltage and reduce an afterimage in an LCD device.

In re claims 2, 3, 7, and 8, Kim discloses (col. 48-52) that the alignment film is formed of polyimide resin and had has a thickness of 700 Angstroms. The dielectric

Art Unit: 2815

constant is inherently 3 because the material of Kim's alignment film is the same as the instant invention.

Claims 5, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. (US 6,271,903) in view of Kim (US 6,177,970 B1) as applied to claims 1 and 4 above, and further in view of Kim et al. (US 6,388,727 B2).

In re claims 5, 19 and 20, Kim '970 already shows (fig. 2) that the pixel electrode (810) and common electrode (310) are formed in the same layer. Shin and Kim '970 do not show that the common electrode is formed of transparent conductive material. Kim et al. '727 teaches (col. 6, lines 47-56) that the common electrode may be formed of a transparent conductive material such as ITO and that the source and drain electrodes are formed of chromium. The material of source and drain electrodes is different from the material of the common electrode. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pixel and common electrodes of Song and Kim '970 by using a transparent material such as ITO because Kim et al. '727 teaches that such materials are suitable for simplifying LCD devices.

### ***Response to Arguments***

Applicant's arguments filed with respect to claims 1 and 4 have been fully considered but they are not persuasive. The applicant primarily asserts that the prior art references do not show all of the elements of the claims, specifically that Shin and Kim

Art Unit: 2815

'970 do not disclose the amended limitation of "the pixel and common electrode being disposed directly on an insulating layer that serves as the gate insulating layer...wherein the alignment film directly contacts upper and side surfaces of the common line and upper and side surfaces of the pixel electrode." As stated in the rejection above, Shin was only deficient in showing that the common electrode is disposed directly on the gate insulating layer and that the alignment film directly contacts the common line. Kim '970 was cited to cure the deficiencies of Shin by teaching that the common line could be formed directly on the gate insulating film and that the alignment film contacts the common line on upper and side surfaces. Kim '970 also provides motivation for this teaching. Thus the cited references show all of the elements of the claims and this action is made final.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2815

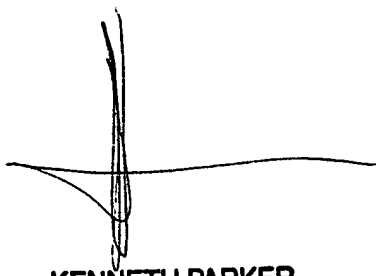
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (571) 272-1737. The examiner can normally be reached on Mon-Thur and alternating Fri 9:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MEW  
*Mew*  
February 5, 2006



**KENNETH PARKER**  
**SUPERVISORY PATENT EXAMINER**